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LEVERAGING INFRASTRUCTURE PROJECT-LEVEL DATA AND DIGITALISING THE PIPELINE

Practice Guide

Infrastructure Working Group Priority 1:
Developing an investable infrastructure pipeline

July 2025

Executive summary

This Practice Guide for Leveraging Project-Level Data and Digitalising the Pipeline, henceforth “the Practice Guide”, is a deliverable of the Group of Twenty (G20) Infrastructure Working Group (IWG) in 2025 under Priority 1, *Developing an Investable Infrastructure Pipeline*. The priority aims to strengthen pipeline development to attract significant private sector participation in public infrastructure development. The Practice Guide contributes to this priority by focusing on making project-level data accessible and reliable, which is a necessary condition for attracting private sector participation. This complements the *Framework for Effective Planning and Preparation Practices*, which focuses on key cross-cutting enablers and their application across the asset lifecycle. The Practice Guide is provided as non-binding, voluntary guidance on how to collect, manage and digitalise the infrastructure pipeline. The ‘how-to’ elements of this Practice Guide are drawn from the following:

- Insights from interviews conducted with G20 members and invited countries.
- Case studies presented during a side-event of the second IWG meeting.
- Empirical evidence from the Sustainable Infrastructure Foundation’s experience in the implementation of the multilateral platform, Source.

Data-related challenges in G20 members and invited countries include, amongst others, fragmented institutional processes, lack of systems interoperability, inefficient data collection and limited communication across government levels. These challenges hinder the creation of investable project pipelines, thereby limiting governments’ ability to make well-informed, evidence-based decisions. In the private sector’s view, these challenges reduce the credibility and attractiveness of individual projects within the pipeline in the long term. This ultimately deters private investors from investing, requiring substantial effort to rebuild trust and attract future investment.

The Practice Guide outlines three foundational blocks required to leverage project-level data and digitalise the pipeline, namely: systematic data collection, interoperability of systems and domestic customisation (Figure 1). Key within the foundational blocks are the principles for effective data collection and management, which include setting clear objectives for project data collection; defining guidelines governing data access and usage; establishing a standardised set of project data required for all infrastructure projects; defining the standardised process for the collation of data into a centralised point; and establishing domestic data governance structures

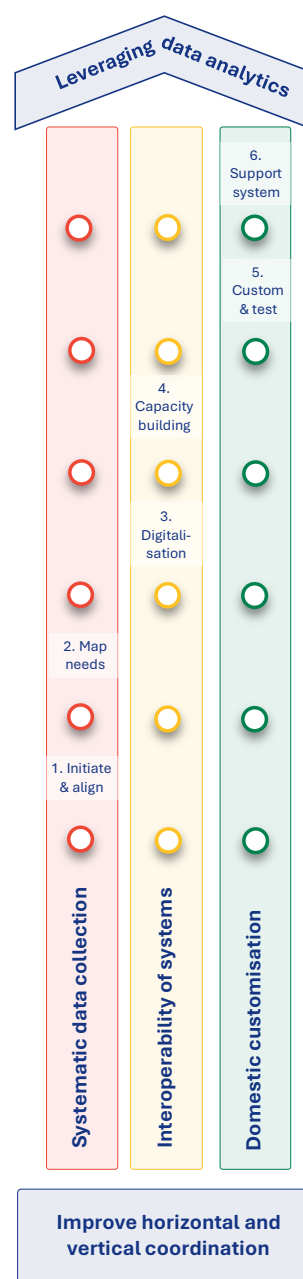


Figure 1: Summary of the ‘How-to’ steps of the digital solution approach

as well as defining the roles and responsibilities of the relevant stakeholders. While applicable to traditional data collection and management methods, these principles also underpin the adoption of a digital data collection and management solution.

The practical aspects of the foundational blocks outline ‘how-to’ steps for implementing a comprehensive digital solution approach, which are:

1. Actions for initial alignment;
2. Mapping of national and/or sub-national specific needs;
3. Digitalisation of systems;
4. Providing capacity-building;
5. Customisation and testing of the digital solution approach; and
6. Establishing ongoing support mechanisms.

Emphasis is placed on ensuring that digital tools that support this approach align with national and/or sub-national regulations, sector-specific needs and existing workflows and processes.

The comprehensive digital solution approach supports the management of timely, reliable data to drive digital transformation and improve project performance. It also helps governments to demonstrate that infrastructure projects are investment-ready across the project lifecycle. Security considerations, such as cybersecurity, especially around cloud-based systems, are highlighted as essential for safeguarding the confidentiality and integrity of infrastructure project data. Additionally, while advanced data analytics such as Artificial Intelligence (AI) are currently transforming the digital landscape, the Practice Guide emphasises that the foundational blocks should be established before these data analytics tools can be effectively deployed and leveraged.

The main recommendation of this Practice Guide is the adoption of a comprehensive digital solution approach that enhances communication flow horizontally across ministries and vertically between levels of government. Ultimately, by strengthening data systems and ensuring coordinated digital practices, governments can lay the groundwork for long-term infrastructure planning, better resource allocation and increased private investment towards a digitalised pipeline of investable infrastructure projects.

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1. Introduction

Bridging the persistent global infrastructure gap is critical to driving faster economic growth and achieving the Sustainable Development Goals (SDGs). Given the scale of investment required in public infrastructure and the constraints in fiscal resources, effective partnerships with the private sector are essential. However, the lack of robust, investable and transparent project pipelines is a significant challenge. A key contributor to this is the limited collection, effective management and usage of high-quality, standardised project-level data in infrastructure development processes.

Standardised project-level data plays a crucial role for private investors, enabling a more effective assessment of project performance in terms of risk and return, as well as supporting compliance and due diligence processes. High-quality, timely data is vital to infrastructure's digital transformation and systematic project-data collection, delivering cost savings, boosting economic productivity, and enabling better project performance across the project lifecycle (KPMG LLP and ATKINS, 2021). Along these lines, it enables a government to demonstrate that its infrastructure projects are investable on a coherent and credible basis across the whole pipeline and project life cycle.

Furthermore, rising infrastructure costs and limited fiscal space require rigorous value engineering and cost assessments, which are heavily reliant on quality, real-time data. Such data is vital for securing financing, conducting due diligence and supporting the approval of funding, particularly for large-scale and publicly financed projects. Beyond supporting the project preparation phase, project-level data may also support competitive tender processes, data analytics capabilities, asset performance monitoring and benchmarking with respect to national priorities, key performance indicators or multilateral best practices. These are essential to enhance investment decision-making, along with leveraging the strengths of the private sector and ensuring swift implementation of a project for long-term success. Project-level data also feeds into national and/or sub-national budgets and broader economic indicators, such as construction costs, ensuring infrastructure investment aligns with wider economic outcomes. Thus, systematic collection and management of project-level data across all stages of the infrastructure project life cycle are critical to strengthening pipeline development.

By contrast, inconsistent and incomplete project-level data hampers the ability to assess project feasibility, manage risks, measure progress and asset performance, hindering the effectiveness of project planning, preparation and implementation, and limiting private sector investment. Exacerbating these data collection and management challenges is a lack of coordination across ministries and between different levels of government, as well as the inability to leverage this for insights, decision-making, and prioritisation through data analytics. These challenges can be addressed most efficiently by collecting project-level data through digital tools that simplify project data management and enhance the effectiveness of the project development cycle.

By focusing on real-world experiences from G20 members and invited countries, the goal of this Practice Guide is to provide a 'how-to' guide for developing an investable infrastructure pipeline. The Practice Guide, therefore, focuses on the steps to effectively collect, manage and digitalise

project-level data to improve accessibility and transparency, inherently unlocking greater private sector investments through a comprehensive digital solution approach.

The Practice Guide is a deliverable of the G20 IWG for 2025 under Priority 1, *Developing an Investable Infrastructure Pipeline*. The objective of the priority is to define a high-level framework for developing a pipeline of infrastructure projects that can attract significant private sector participation across the entire project lifecycle, identifying critical gaps, enablers and mapping potential solutions to address them. This Practice Guide, together with the *Note on Improving the Accessibility and Availability of Key Market Data* (“Market Data Note”), serve as deep dives for the *Framework for Effective Planning and Preparation Practices* (“Framework”), examining in greater detail, the role of data as an enabler for effective preparation practices.

2. Methodology

The methodology adopted for the development of the Practice Guide is outlined below.

A questionnaire composed of 20 interview questions was compiled through an iterative process based on the experiences of countries using the Source platform.

The questions were organised into three categories, each addressing a distinct focus area. To ensure their relevance and clarity, a test interview was conducted. This process of refinement led to the final set of questions, which, when employed, generated productive and insightful discussions during the interviews. The interview questions were structured as such for the following purposes:

- **Systematic data collection:** Examining how G20 members and invited countries collect, manage and utilise project-level data for infrastructure planning. This category explored automation, existing challenges and the benefits of digital tools in improving data quality and accessibility.
- **System interoperability:** Investigating how existing digital software solutions and applications across ministries interface, with a focus on compatibility, data exchange and regulatory challenges in building a cohesive digital ecosystem.
- **Domestic customisation:** Exploring the development of a tailored digital solution approach. This included leveraging best practices and fostering the development of advanced practices (e.g., AI agents) to facilitate the creation of digitalised project pipelines aligned with national priorities.

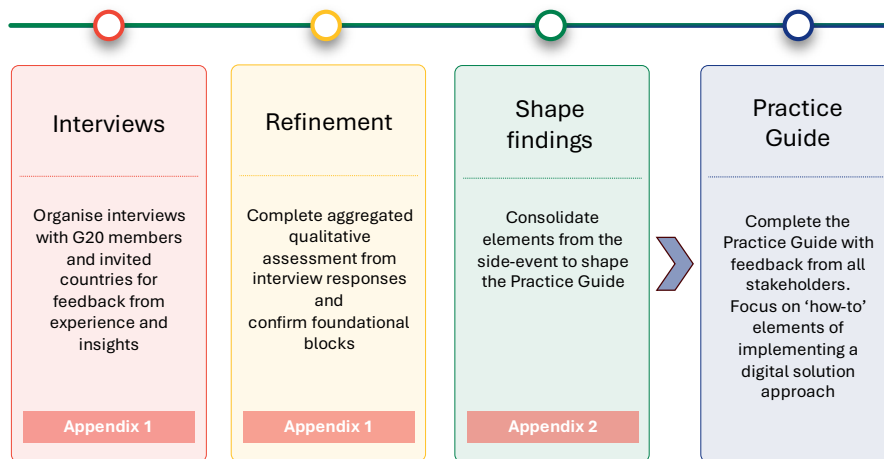


Figure 2: Methodology for the Practice Guide

Participants shared their country experiences through oral interviews, and when interviews were not feasible, participants completed the questionnaire and shared written responses (Figure 2). Some countries facilitated interviews at both national and sub-national levels of government, as well as across various ministries. Responses to the questionnaire were used to refine the aggregated qualitative assessment ([Appendix 1](#)). From this aggregated and qualitative dataset, key insights were iteratively collated to inform this Practice Guide.

The Practice Guide further draws from case studies presented during a G20 IWG side event, *Showcasing the Use of Data to Support Project Pipeline Development* ([Appendix 2](#)), as well as the discussions on the experiences of countries using the Source platform for the digitalisation of the infrastructure planning and preparation process. Moreover, other publicly accessible platforms have influenced the design of the Practice Guide, such as *dBrain+* (Ministry of Economy and Finance, Korea, 2025), *Gati Shakti* (National Informatics Centre, Ministry of Electronics & Information Technology, 2024), *the PIMA framework* (International Monetary Fund - Infrastructure Governance Facility, 2025), *Rosinfra* (Rosinfra, 2025), *SDC* (U.S. Department of Transportation, 2024), *TENtec* (European Commission, 2025) and numerous national infrastructure project pipelines ¹.

3. Foundational blocks

The Practice Guide identifies three foundational blocks essential for leveraging project-level data and digitalising the pipeline: **Systematic Data Collection**, **Interoperability of Systems**, and **Domestic Customisation**. Systematic data collection relates to a structured way to collect, store and update project data across government institutions, whereas interoperability is the ability of different processes, stakeholders and systems to work together seamlessly. Lastly, customisation in the context of this Practice Guide refers to the process of adapting the relevant

¹ These are not listed to protect the confidentiality of the interview process.

data collection and management processes to country-specific contexts while also aligning national and sub-national infrastructure planning for consistency and efficiency.

The principles of project data collection and management ([Section 4](#)) provide the basis for the foundational blocks and are intended to support the leveraging of data for preparation support. By encouraging more standardised, transparent and collaborative data practices, the principles aim to articulate the enabling conditions within the foundational blocks.

The digitalisation of data collection, when managed within a strong governance framework, as discussed in [Section 5](#), improves the efficiency with which data is managed and utilised and reduces the associated costs through better utilisation and innovation (KPMG LLP and ATKINS, 2021).

4. Principles of project data collection and management

Key insights from the interviews

Within G20 members and invited countries, the main challenge in relation to data collection is the quality of the data. Data quality is highly heterogeneous, varying significantly due to differences in format, processes, systems, organisational frameworks, usage, and reporting methods. The lack of project data completeness is a key contributor, owing to semi-manual submissions (e.g., via common software such as Word, Excel, email systems, etc.) that require multiple and manual data management. Moreover, project data is often not shared systematically across government departments, creating fragmentation. Poor data quality hinders economic and digital transformation goals, affecting efficiency and progress in digitalising the pipeline. Critically, the lack of a consistent definition of infrastructure impairs the ability of both public and private sector decision-makers to compare projects and make evidence-based decisions. These key insights are further supported by the *Market Data Note*, which highlights that the challenge of data fragmentation and the lack of a taxonomy for infrastructure is pronounced.

The collection of project data for infrastructure pipeline planning and preparation is vital for informed decision-making, strategic planning and efficient resource management. This data typically includes basic project details such as name, location, classification, timelines; financial data covering cost estimates, financing and funding sources; and procurement options and delivery models such as traditional procurement, public-private partnerships (PPP) or concessions. In addition, technical and planning data – such as data for feasibility studies, projected demand, implementation approaches and regulatory frameworks – are essential for assessing project viability. This information enables governments to prioritise initiatives and allocate resources effectively. Transparency on projects also improves coordination amongst key public authorities, agencies and, where applicable, all relevant stakeholders, including citizens, civil society and private sector actors.

Principle: Systematic data collection

Set clear objectives for project data collection, define guidelines governing data access and use, and establish a standardised set of project data required for all infrastructure projects, covering technical, financial, regulatory, and implementation-related information. The required formats and the frequency of data collection must be clearly articulated by national and/or sub-national governments to ensure consistency, completeness and relevance for decision-making. This set of principles ensures that the data collected is fit-for-purpose and used as intended. Once project data is collected, data management becomes essential. Effective management practices include data verification and tracking changes, auditing for inconsistencies and ensuring that data is stored and retrieved efficiently to support ongoing project activities. Minimising latency in data sharing enables public actors to respond quickly to shifting priorities and emerging challenges, ensuring that the data collected remains relevant.

Principle: Interoperability of systems

Define the standardised process for the collation of data into a centralised point. This ensures seamless data flow, consistency and management across all stakeholders. Traceability is a critical aspect as it allows data to be traced back to its original source, ensuring reliability and completeness. Transparency is equally important, ensuring that data is accessible, understandable and usable by all authorised stakeholders, fostering accountability and effective decision-making. A well-designed governance structure provides a cohesive framework that supports the management of data and ensures its quality over time.

Principle: Domestic customisation

Tailor data collection and management practices to each national and/or sub-national context, establish domestic data governance structures and define the roles and responsibilities of the relevant stakeholders. Coordination and communication – through designated stakeholders – facilitate a harmonised collection and processing of data across ministries, agencies and sectors, preventing siloed, inaccurate and incomplete information. Coordinated exchanges between ministries, agencies and participating stakeholders help to eliminate duplication and close data gaps. Also, minimising latency in data-sharing enables public actors to respond quickly to shifting priorities and emerging challenges, ensuring that infrastructure pipelines remain agile and relevant. Project data should be actively leveraged to improve future infrastructure planning, ensuring that insights from completed projects are systematically incorporated into the planning of future initiatives, fostering a culture of ongoing refinement and efficiency.

These principles are not only about ensuring the security of the collected data, but also about establishing a mandatory and standardised process that should be followed across all authorised stakeholders.

5. Enhancements through a digital solution approach

To enhance the principles of the foundational blocks outlined above in [Section 4](#), progress towards a digital solution approach offers an opportunity for increasing efficiency in the collection and management of project-level data. This section sets out the digital solution approach to support the development of an investable infrastructure pipeline. It also provides the key insights from the interviews, interwoven with the ‘how-to’ elements within the themes of the foundational blocks.

These ‘how-to’ elements are conceived to support and complement a national digitalisation strategy for the whole lifecycle of infrastructure development. They are designed to be fully aligned with governments’ legal framework and institutional processes, whilst interfacing and being interoperable with all their existing digital applications and Information Technology (IT) systems. Also, the elements strengthen, rather than substitute, existing institutional knowledge. Long-term success of the digital approach depends on clear governance structures, stakeholder buy-in, and the effective assessment and development of internal capacity. Effective infrastructure implementation requires more than technology; it requires institutional alignment, change management, a tailored approach that reflects each country’s regulatory and operational context, and national priorities.

a. Systematic project data collection

Key insights from the interviews

A digital software approach offers numerous benefits for infrastructure project data solutions, particularly in areas such as automation and standardisation of formats. By automating data collection processes, digital systems can significantly reduce manual errors and inconsistencies, ensuring higher data quality and reliability. Standardisation of data formats further enhances compatibility across different systems, improving data management and making it easier to compare and assess projects. This is crucial for supporting data-driven decision-making in areas like project prioritisation, investment planning and cost management, where accurate and consistent data is vital for conducting cost-benefit analysis and evaluating externalities.

Furthermore, a digital approach enables greater transparency by making project data accessible, when applicable, to both public and private sector stakeholders, fostering more effective government-private sector collaboration. It also facilitates data management, which is essential for attracting private sector investment and promoting competition. By consolidating data into centralised systems, digital tools can streamline project assessment processes, identify market gaps and improve the overall efficiency of the project pipeline – ultimately driving better infrastructure outcomes and more informed decision-making.

How to - systematic data collection

Systematic data collection

The following steps outline a streamlined, national and/or sub-national approach to collecting project data by adopting a comprehensive digital solution approach that centralises and standardises infrastructure project data.

Step 1: Initiate and align

The goal of this step is to secure national commitment, align key actors and lay the groundwork for successful implementation by understanding a country's digital and institutional landscape:

- Secure formal interest from the government, identify a lead government agency (e.g., Office of the Prime Minister or Presidency, Ministry of Finance and/or Planning, PPP Unit, or Infrastructure agency) and appoint a single point of contact within the lead government agency.
- Form a steering committee involving the lead government agency, key development partners and relevant institutional stakeholders to ensure balanced decision-making and ownership across the board at the national level.
- Schedule regular high-level meetings to ensure strategic alignment and commitment across government and partners.
- Review existing IT applications and systems, regulatory frameworks and relevant procurement processes to understand implementation needs and avoid duplication.
- Assess internal capacity within the lead agency for executing digital reform and assign additional resources or experts to support the digital solution approach implementation.

Main outcomes: Understanding of the implementation approach, outlining all stakeholders whilst understanding capacity of internal resources, the digital landscape, existing applications and a detailed implementation work plan (see following steps).

Step 2: Mapping needs

This step ensures that the solution is aligned to the national and/or sub-national processes by identifying institutional processes and legal frameworks of infrastructure project preparation and management, digital workflows, data needs and IT requirements.

- Conduct a comprehensive needs assessment to document infrastructure project development cycles, institutional processes and legal frameworks, project contractual delivery options (e.g., traditional procurement, PPPs, concessions) and sectoral and sub-national specifications, where applicable.

- Identify datasets required for interoperability with existing IT applications and systems and outline how project assessment methods and gatekeeping processes will be digitalised.
- Clarify reporting needs at both project and portfolio levels to ensure usability across public authorities and agencies.
- Develop an institutional strategy to embed the digital system within national regulations, ensuring ownership across ministries and local public authorities with rapid operational implementation and long-term adoption and sustainability.
- Seek official approval from digital authorities for the use of the comprehensive digital solution approach as well as across government IT systems.

Main outcomes: Needs assessment detailing implementation architecture, digital workflows, evaluation methodologies and institutional strategy.

b. Interoperability of systems

Key insights from the interviews

Existing systems generally suffer from little to no interoperability, with the exchange of data between systems being a significant challenge as heterogeneous or outdated legacy formats require significant effort to harmonise. In some cases, several applications were in use, highlighting the urgent need for improved interoperability. Siloed processes across ministries create inefficiencies, data gaps, duplication and inappropriate asymmetrical information, which all hamper effective project management and decision-making.

An interoperable digital solution approach is key to addressing these issues and can greatly improve systematic data collection and management. By enabling more efficient data exchange, a comprehensive digital solution approach can support a harmonised, cross-sectoral approach to infrastructure development and reduce inefficiencies.

How to – interoperability of systems

Interoperability of systems

To enhance interoperability across ministries and between national and sub-national systems, a focused approach on digitalisation and capacity building is essential:

Step 3: Digitalisation

- Implement communication interfaces between the different IT environments across national and/or sub-national public authorities or agencies (e.g., via Application Programming Interfaces (API), messaging-oriented solutions, or other methods).
- Clarify user roles for each national and/or sub-national public authority or agency, detailing responsibilities, approval processes, and monitoring activities to ensure effective management and collaboration.
- (Optional) Prepare a user guide tailored to the domestic context, explaining the roles of each institution and agency, along with other stakeholder involvement as

appropriate, outlining the activities they will each undertake along the phasing and gatekeeping process, and defining monitoring responsibilities.

Main outcomes: Streamlining infrastructure delivery and assessment processes within an IT environment, enabling system interoperability through communication interfaces, and defining user roles and responsibilities across authorities.

Step 4: Capacity-Building

- Provide training to civil servants responsible for infrastructure preparation and management. It is important that system users from all relevant ministries, agencies and local public authorities understand, take ownership of, and can fully utilise the digital solution's functionalities.
- Organise structured feedback mechanisms – such as evaluation forms and change management coaching – to gather user experience insights, identify areas for operational improvement and support effective implementation.
- (Optional) Encourage continuous learning by fostering a community of practice for national and/or sub-national administrators and users, enabling the exchange of practical experiences and the development of capacity for effective and efficient system use.

Main outcomes: Comprehensive capacity-building framework, which outlines the training sessions conducted, the outcomes achieved, and any adjustments made based on user feedback. Finally, monitoring and evaluation should be conducted to assess the effectiveness of both the capacity-building and digital solution implementation efforts, identifying areas for further development and improvement.

By focusing on digitalisation and capacity-building, national and sub-national applications and systems can be more effectively connected, ensuring a seamless flow of data and fostering better decision-making and project management.

Additional factors: Coordination and communication

Human factors beyond capacity-building also cannot be ignored. Coordination and communication are critical enablers for supporting effective data collection, management and usage. The exchange of lessons learnt across ministries, complemented by improved coordination between different levels of government, can support better decision-making, especially when communicating both “bad news” and “good news”. This, in turn, builds a stronger foundation for trust and collaboration.

Further, noticeable improvement has been observed in the perceived quality of data when the data is published and made accessible. Data transparency and visibility significantly contribute to improved trust amongst stakeholders, including investors. A comprehensive, interoperable digital solution approach customised to domestic needs can significantly enhance both communication and coordination, improving the accuracy and timeliness of information across the board.



c. Domestic customisation

Key insights from the interviews

There is still significant data fragmentation of various applications and IT tools. This is largely due to the lack of local standardisation in the context of highly compartmentalised ministerial actors, and the challenge of turning large volumes of data into actionable insights. A tailored solution approach that considers specific national and local needs, as well as the specific regulatory and sectoral contexts, can address these challenges. While data-sharing across stakeholders is required, a one-size-fits-all approach is considered neither effective nor welcome.

The national, comprehensive digital solution approach should fully reflect the domestic context to be truly effective, ensuring it is built on human expertise and supports better decision-making, while fostering a sense of ownership over the technology. This focus on domestic customisation is essential for improving the effectiveness and smooth implementation of the digital solution approach across public authorities and regions.

How to – domestic customisation

Domestic customisation

Step 5: Customisation and testing

The testing and launch phases are critical to ensuring that the comprehensive, customised solution is fit for purpose and addresses the specific needs and specifications of the national context. Below are the steps involved in evaluating the digital solution approach in real-world conditions, gathering user feedback, and refining the digital solution approach before it is launched more widely:

- Adapt the comprehensive digital solution to fit the national and/or sub-national decision-making processes and institutional structures, infrastructure planning and project preparation processes and gatekeeping phases, while ensuring alignment with local frameworks.
- Customise the digital solution with the national requirements for an infrastructure project, and the various infrastructure project delivery modes (e.g. traditional procurements, PPPs, concessions, etc.) – enabling a more efficient and uniform approach across ministries and governmental levels.
- Select pilot areas by identifying key sectors and projects for the test phase, ensuring they align with national needs and challenges.
- Collect detailed feedback from users during the testing phase to assess the system's performance, usability and effectiveness in addressing national needs for workflow processes and data collection.
- Use the feedback to refine the national and/or sub-national digital solution, including adjustments to its operating features and connectors.
- Prepare a comprehensive evaluation, summarising the results of the test phase, highlighting strengths, challenges and necessary improvements.

- After successful testing, launch the comprehensive digital system nationally and/or sub-nationally. Test all necessary interfacing with existing applications to guarantee full operability at scale, while providing support for ongoing capacity-building.
- (Optional) Revise user guide and documentation to reflect any changes made to the system, ensuring they are in line with national and/or sub-national requirements and customisations.

Main outcomes: Customising the comprehensive digital solution approach to national and/or subnational decision-making and institutional structures; and a test review, which summarises the results, feedback, and lessons learnt during the test phase. This provides an overview of the digital solution approach's performance and the insights gained from real-world testing.

Step 6: Supporting the system

Following the initial test phase with its relevant adjustments, keep iterative approaches to control quality and feed incremental improvements. Once the system has been launched, the focus now shifts to providing robust, recurrent support to all public authorities involved in infrastructure projects and ensuring that the system approach operates smoothly and at scale, as follows:

- Provide continuous support through dedicated channels such as a helpdesk or assistance and coaching, ensuring users receive full support in the transition phase toward sustainable implementation.
- Regularly monitor the digital solution approach to track usage, identify emerging issues, and ensure the customised approach continues to meet user needs across institutions and user types.
- Implement regular solution updates based on user feedback, evolving requirements and new functionalities to enhance data collection and reporting capabilities.
- Identify the responsibilities of all parties involved and ensure that agreed-upon service objectives are met, such as system availability and reliability.
- Assist with the implementation of the digital solution into institutional processes, ensuring it complements existing workflows and supports informed decision-making at both national and sub-national levels. Provide guidance on any legislative adjustments needed to ensure the system's long-term success.

Main outcomes: Development of an ongoing support framework, outlining the support processes and contact points for users, and ensuring they have access to timely assistance for any issues or queries.

The above practical approach for implementing a comprehensive digital solution approach is synthesised into six practical steps guided by the foundational blocks – systematic project data collection, interoperability of systems, and domestic customisation – which act as foundations of implementation. The ‘how-to’ elements are designed to sequentially guide governments but

also serve as a benchmark for measuring internal capacity and institutional effectiveness, depending on where they stand on their digitalisation strategy, through a step-by-step pathway toward successful implementation.

A high-level summary of the six steps is presented in Figure 3:

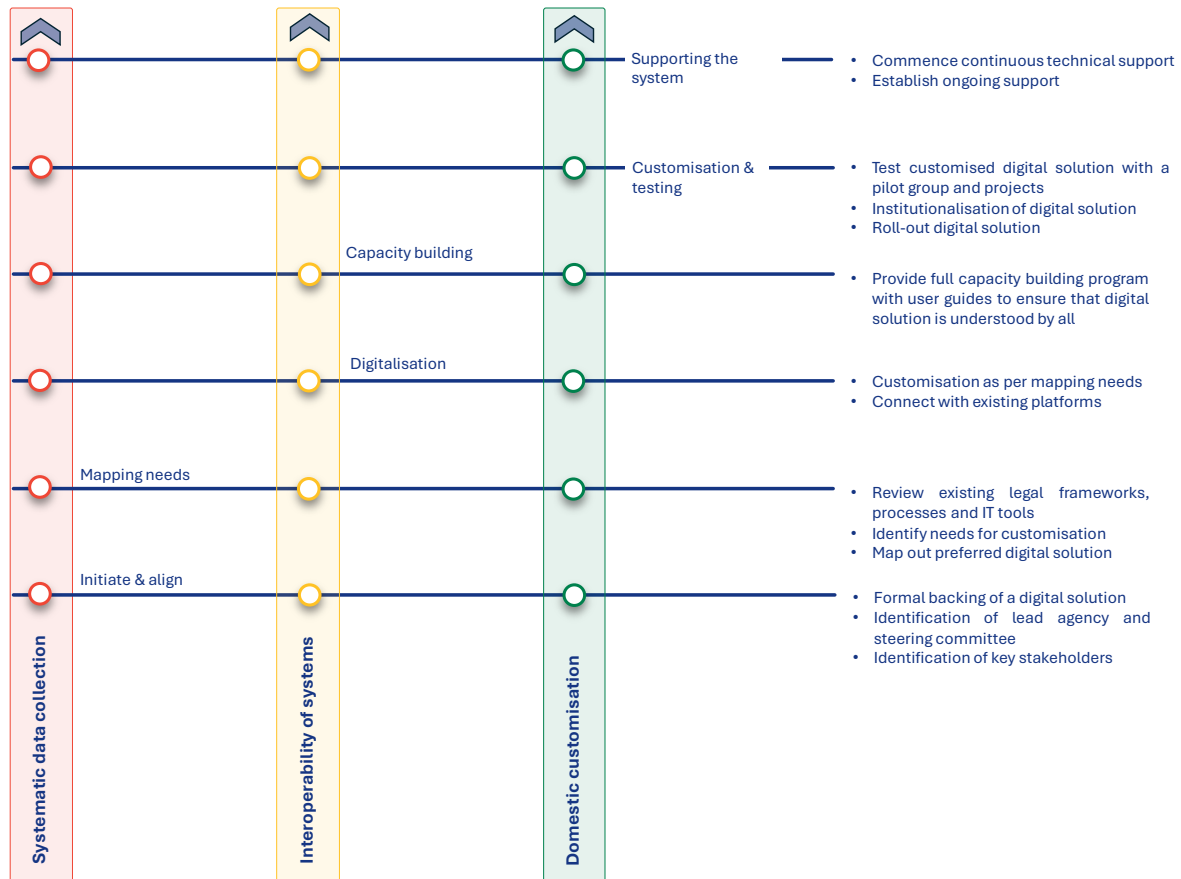


Figure 3: 'How-to' visualisation of the digital solution approach

6. Security in a digital solution approach

When adopting any digital solution approach, particularly in government infrastructure projects, it is crucial to prioritise security, such as cybersecurity, to safeguard sensitive data. The required level of security covers different aspects, such as data protection in terms of access and data integrity. The underlying processes to reach such levels of service involve human and technical processes, data location, flow paths, data transport, data consumption endpoints, data processing, data at rest, monitoring, governance and passive and active security measures.

As the footprint of cloud-centric solutions expands and continues to shape the IT landscape, there is a growing awareness of the risks associated with how and where a project's data is stored, with a strong emphasis on ensuring security, especially for politically sensitive or critical data. Countries have expressed concerns around guaranteeing the sovereignty, confidentiality and integrity of project data.

The desire for countries to safeguard government data within their national borders and through a sovereign repository framework, driven by concerns over security and the potential sensitivity of infrastructure project data, is a key consideration. The key deliberation, however, is on balancing resources and considering the capacity of individual countries to mobilise sovereign repository frameworks and cloud-based systems. Leveraging “off-the-shelf” digital solution approaches – ideally delivered as a public good to ensure accessibility for all – will support countries to meet the evolving security requirements of digital solutions against different types of attacks. In this sense, governments can benefit from the latest technology developments whilst maintaining their data sovereignty using the public good solution.

Despite these challenges, the transition to cloud-based systems is widely recognised as a critical step towards strengthening security, enhancing scalability, improving cost-efficiency and enabling modernisation. However, the success of this transition depends on effectively addressing concerns around security, human capacity and data sovereignty. In any cloud or digital solution, security should be integrated from the outset to ensure that data integrity and confidentiality are maintained throughout the entire project lifecycle.

7. Leveraging data analytics

The growing role of data analytics tools and technologies (e.g. business intelligence solutions, predictive analytics, geospatial and environmental analytics, AI, etc.) in supporting systematic data collection, analysis, project development, and decision-making in public infrastructure has become increasingly evident. Data analytics is seen as a powerful tool for leveraging large datasets, identifying patterns, and accelerating technical workflows, while offering advanced insights. However, the effective operational use of data analytics – and in particular AI – requires a solid foundation of extensive, high-quality data, robust database systems and strong connectivity.

At this stage, comprehensive data analytical adoption and AI usage are still in their early phases, with rapid progress observed in some areas. For now, only a few countries have been experimenting with extensive data analytics and AI in pilot stages, largely due to concerns around a lack of data and exchange of data between ministries, security, confidentiality, regulatory compliance and the absence of explicit, mature policies. Additionally, data analytics and AI need to complement, not replace, human judgement, particularly for repetitive or data-intensive tasks. This emphasis on data analytics highlights the importance of preparing high-quality data solutions before attempting to implement more sophisticated technological capabilities.

From this perspective, data analytics can be leveraged to ratchet up value creation by enhancing the speed and efficiency of data collection. The ability to rapidly process large volumes of data enables more timely and informed decision-making, which is essential for infrastructure project development. However, to fully unlock this potential, it is crucial to first establish the foundational blocks necessary for effective data analysis and data quality creation. Thus, adopting a comprehensive digital solution approach that is built on systematic data collection, interoperability of systems and domestic customisation, anchored on transparent

communication processes across ministries and between national and sub-national levels, is essential to ensure that digital solution approaches are robust, reliable and capable of handling the complexities that data analytics introduce. Proper understanding and management of data analytics and AI's potential risks – such as issues of security, bias and data integrity – are vital before its implementation.

8. Options for a digital solution approach

Many options for digital solution approaches exist for various project stages, developed within countries or by organisations worldwide. A small number of those currently in use were cited under [Section 2](#). One example used by several G20 members and invited countries is Source. Source is a multilateral digital platform designed to enhance the preparation and management of sustainable infrastructure projects, supporting both traditionally procured projects and PPPs. It is designed to enhance the preparation and management of sustainable infrastructure projects across the whole project life cycle and is hosted on the United Nations International Computing Centre servers. Source is governed by Multilateral Development Banks (MDBs)² and made available free of charge to developing countries as a global public good. The platform is delivered through the Sustainable Infrastructure Foundation, a not-for-profit, donor-funded organisation.

Source is built on the foundational blocks, enabling governments to systematically collect, manage and monitor project-level data. The platform's IT architecture is designed to connect across a country's existing digital systems to promote interoperability. Furthermore, Source can be tailored to the national context, accommodating country-specific assessment methodologies, timelines and processes for infrastructure projects delivered through both traditional procurement and PPP models.

Therefore, countries may use Source to augment their national platforms. Where national platforms do not exist, the Source platform may serve as a foundational tool.

9. Conclusion

The experiences of G20 members and invited countries underscore a shared set of project data-related challenges in infrastructure project development. These persistent issues hinder the development of coherent, investable project pipelines and continue to limit the pace and scale of private sector participation.

²The MDBs involved in the governance of Source are the Asian Development Bank, the European Bank for Reconstruction and Development, the European Investment Bank, the Inter-American Development Bank, and the World Bank Group, with the African Development Bank and the Asian Infrastructure Investment Bank participating as observers.

This Practice Guide outlines principles of effective data collection and management, alongside a structured pathway toward a country-by-country comprehensive digital strategy, grounded in three foundational blocks: systematic data collection, interoperability of systems, and domestic customisation (see Figure 4).

By leveraging infrastructure project data through a comprehensive, digital solution approach built on consistency, accessibility, human expertise, capacity-building and reliability, governments are empowered to tap into the potential of emerging technologies, such as, but not limited to, data analytics, predictive analytics, geospatial and environmental analytics, and AI. Some hesitation has been noted regarding the risk that automated digital tools may replace national human expertise within ministries. The key consideration in this regard is that digitalisation should enhance, not replace, the valuable knowledge and judgement of national and local professionals.

To strengthen efforts in data collection and management to support pipeline development, it is recommended that countries adopt a comprehensive, digital solution approach to leverage the use of project-level data and to help resolve the issues of data collection and increase the quality of data collected, as well as reduce data fragmentation. The data solution approach should also enable interoperability and customisation to ensure better communication across ministries and increased communication between national and sub-national levels of government. In addition, while higher technology capabilities – such as data analytics and AI, which have high potential and value for infrastructure projects – continue to grow, the necessary foundational blocks must first be in place to collect a large range of quality data.

In addition to addressing current shortcomings in data collection, management and digitalising the pipeline, countries are encouraged to consider using Source to augment their national platforms. Where no such national platforms exist, the Source platform may serve as a foundational tool.

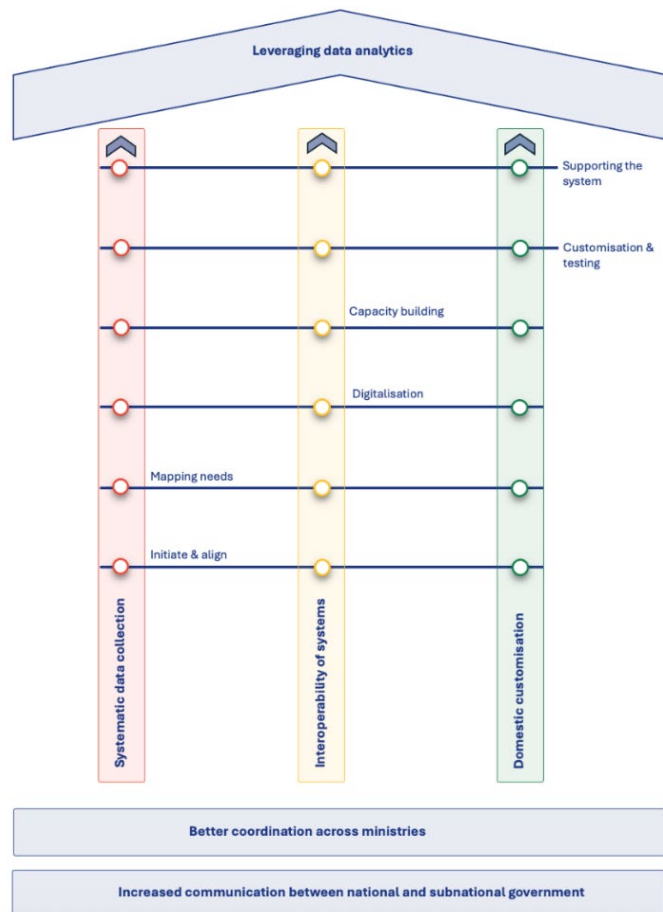


Figure 4: ‘How-to’ visualisation of the digital solution approach

10. Appendices

a. Appendix 1: Interviews and evidence integration

Key interview facts:

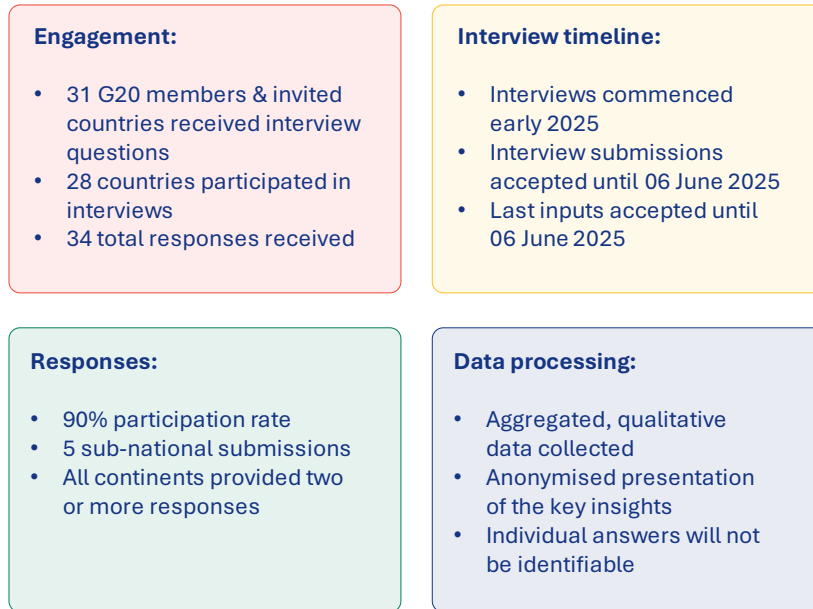


Figure 5: Summary of key interview facts as of June 2025

Interview: Enhancing infrastructure project pipelines via software solutions

The summary of responses below was compiled based on qualitative, aggregated and anonymised data. Individual answers will not be identifiable. Additionally, several countries provided multiple interview responses from different ministries or the perspective of other national and sub-national levels of government bodies. Therefore, some countries provided more than one response to the interview questions. All responses were weighted equally, and an aggregated, qualitative summary of the responses is provided below, alongside each interview question.

Section 1: Systematic project data collection

This section aims to assess how governments collect, manage and utilise project data for infrastructure pipeline preparation. It explores the effectiveness of data collection processes, the level of automation, challenges faced and the perceived value of a digital solution approach in improving data management. The insights gathered will help identify gaps and opportunities to enhance project data quality and accessibility.

1. What do you consider to be 'project data' in terms of infrastructure project pipeline preparation? Is your government collecting these types of project data?

All G20 members and invited countries collect project data for infrastructure project pipeline preparation; the varying levels of how and why this project data is collected is summarised within the responses to the following questions. Project data in infrastructure pipeline preparation consists of key information required to assess, plan, and implement projects. This includes **basic project details such as name, location, classification, and timelines, as well as financial data covering cost estimates, financing and funding sources, procurement options, and delivery models such as traditional procurement, public-private partnerships or concessions. Technical, cost data and planning information – including feasibility studies, projected demand, implementation methods and construction timelines – are also fundamental.** Regulatory and contractual details – such as legal modalities and clauses and partnership arrangement structures – play a crucial role in shaping project preparation and execution. Environmental, Social, and Governance (ESG) impact assessments are often required, particularly for large-scale projects, to evaluate sustainability factors, although the approaches vary (for example, detailed assessments of positive and negative externalities such as land value changes, and indirect effects on economic activity and public finance).

Governments vary in the extent to which they collect and centralise infrastructure project data. In some cases, project data is compiled at the municipal or sector level to support financing and funding decisions, while others maintain national project databases or online systems to track infrastructure pipelines. The data collected often includes project definition, investment details, start and end dates and geographic information. Some governments also require annual reporting on major infrastructure projects, capturing details on costs, contractual agreements, and implementation status. Additionally, certain initiatives focus on enhancing long-term infrastructure planning by integrating project feasibility, capital costs, financing models and procurement strategies into national frameworks. In some cases, previous project pipelines serve as the foundation for ongoing data collection efforts, ensuring continuity in tracking project progress and investment trends.

2. Why is your government collecting project data, and what is the project data for?

Project data is collected primarily to support strategic planning, informed decision-making, and efficient resource management. A recurring theme across responses is the importance of this data in guiding infrastructure development within long-term frameworks, such as national or sector-specific plans. **Project data enables authorities to set priorities, ensure feasibility within defined timeframes, and select initiatives with the greatest potential for impact.** It also helps to identify viable projects early, allowing governments to avoid misallocation of limited public funds.

Financial oversight is another key driver behind data collection. With rising project costs and limited room for budget allocation, governments use project data to support value engineering, cost assessments and overall cost-effectiveness. Accurate, real-time data is essential for securing and approving financing, particularly for large-scale or publicly

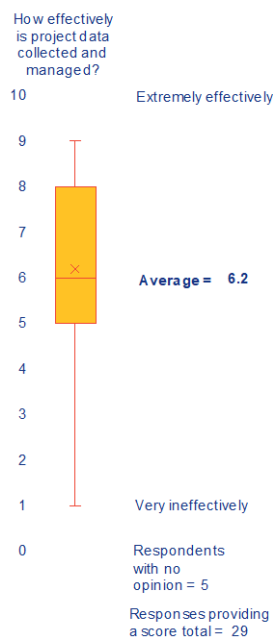
financed infrastructure. Data on awarded contracts, certified payments and construction progress also feeds into national accounts and economic indicators, such as construction costs, ensuring that infrastructure investment is aligned with broader economic outcomes.

Project monitoring and risk management were also frequently cited. As infrastructure projects grow in complexity and scale, governments have implemented more robust oversight mechanisms. Dedicated bodies or commissions often track major projects to better understand risk profiles, improve delivery outcomes, and maintain accountability throughout the project lifecycle. This includes data collection from both central and local government entities, ensuring comprehensive visibility over progress and potential bottlenecks and national priorities.

Data also plays a critical role in stakeholder engagement and market transparency.

Governments share project pipelines and documentation, including meeting records and technical details, **with a range of partners, including private sector actors.** This enables better coordination, fosters investment, and builds confidence amongst supply chain actors by providing visibility into upcoming opportunities.

3. On a scale of 1–10, how effectively does the government in your country collect and manage project data for infrastructure pipelines? (0 = No opinion, 1 = Very ineffectively, 10 = Extremely effectively)

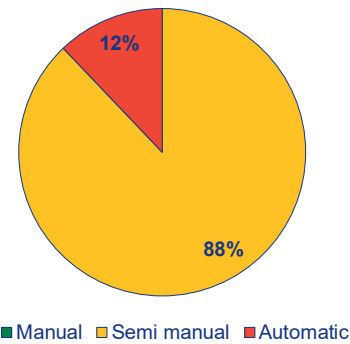


While several participants noted that data collection processes are generally effective, particularly for larger, higher-profile projects, there was a consistent acknowledgement that current systems remain far from optimal. At the same time, the effectiveness of data collection varies significantly across different sectors, regions and levels of government. Public bodies of smaller local communities face sharp internal capacity constraints and often depend heavily on external consultants.

Several respondents highlighted that project data is collected through formal legal requirements or mandatory sector-specific procedures, which help ensure a certain degree of structure and reliability. Notably, **programmes do not always capitalise on data from previous projects to inform future ones, limiting opportunities for continuous improvement.**

4. How is your government collecting project data? Is your project data collection process manual (paper), semi-manual (Excel, email, etc.), or automated (entered digitally at the project-level, visible to ministries)?

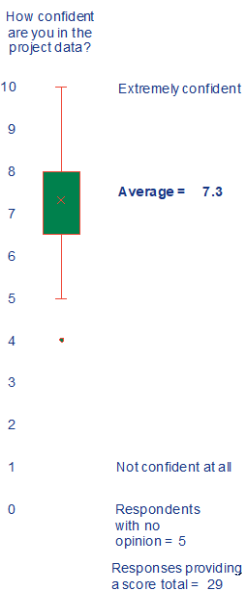
How is your government collecting project data?



■ Manual ■ Semi manual ■ Automatic

Most responses indicate that project data collection is **semi-manual, relying heavily on common IT tools such as Microsoft Word and Excel or email systems or Adobe PDFs, and – in some cases – paper documents. Many departments use Excel templates to organise data.** While some dedicated applications may be used for e-procurement, asset management or fiscal management, these systems are often not fully integrated across departments or accessible at higher levels, such as by ministers. A small number of respondents (12%) reported using more automated systems, though Excel still plays a key role in many of these cases. Some governments also outsource certain data collection functions to external contractors, who often continue to rely on semi-manual methods.

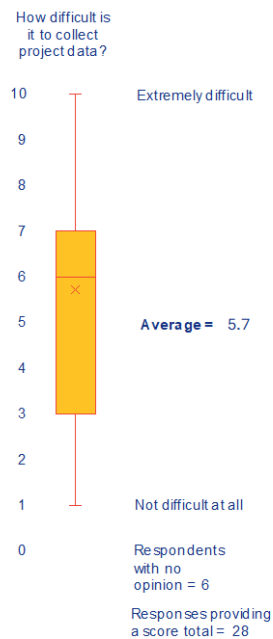
- On a scale of 1-10, how confident are policy makers, project managers, etc., in the quality of the project data collected? (0 = No opinion, 1 = Not confident at all, 10 = Extremely confident)



The responses vary greatly, where **data quality was reported as highly heterogeneous and dependent on a number of factors.** Many respondents reported being confident in data provided by third-party contractors or from larger urban areas, where standards and expectations are often well established. However, confidence tends to be lower regarding data provided from smaller municipalities or rural areas, partly due to difficulties in verifying its origins and robustness.

While data from technical studies is usually reliable, issues such as duplication and outdated information can affect overall trust. **There is also a distinction between different types of data: real-time data is often considered accurate and reliable, whereas forecast and assessment data, particularly around costs, are viewed as less trustworthy.**

6. On a scale of 1-10, how difficult is it to collect project data today? (0 = No opinion, 1 = Not difficult at all, 10 = Extremely difficult)



The responses **reveal different experiences**, clearly highlighting two groups. One group of countries reported little difficulty in collecting data, primarily **because they outsourced the data collection requirements to third-party providers, or because the submission of data was a legal requirement, or a premise for obtaining budgetary approval for a project.**

On the other hand, the second group of countries underlined significant challenges in collecting data. Key issues included insufficient manpower, with a lack of onsite internal personnel and consultants and difficulties in accessing complete or accurate data sources. They, therefore, noted their **struggles with missing or incomplete information** hampering their infrastructure project preparation and planning. Additionally, **coordination between national and sub-national levels with different frameworks and practices hindered infrastructure data exchange.** Line ministries in charge of projects were often overloaded with other priorities, further delaying the allocation of resources for data collection. There were also concerns about transparency, particularly in local governments hesitant to engage in publishing ongoing project data. These countries pointed to the time-consuming nature of enforcement and the operational challenges in aggregating data, especially across multiple levels of government, as significant obstacles.

7. In general, what challenges do policy makers, project managers, etc., in your country face when collecting and managing project data for infrastructure pipelines?

Policymakers and project managers face several challenges when collecting and managing project data for infrastructure pipelines. A key issue is **the fragmentation of data sources, responsibilities and processes across sectoral departments and between levels of government.** Aligned with the institutional arrangement structures, databases are generally stored in silos, making it difficult to consolidate into a single framework that would be useful for analytics. Inconsistent data quality and lack of data reliability further complicate decision-making, a difficulty made further acute when local governments provide incomplete or delayed information.

High staff turnover and a lack of capacity-building are significant barriers, as new personnel may not have the necessary experience or training to manage complex data. Additionally, **coordination between national and other levels of government is often poor**, leading to delays in sharing data and difficulties in aligning project goals.

8. Are policy makers, project managers, etc., in your country facing challenges due to missing or partially missing project data? Which types of project data are usually considered missing?

Policymakers and project managers face significant challenges due to missing or incomplete project data, particularly at sub-national levels where coordination is lacking. Common issues include the absence of nationally integrated systems for data management and the inconsistent standardisation of processes and guidelines.

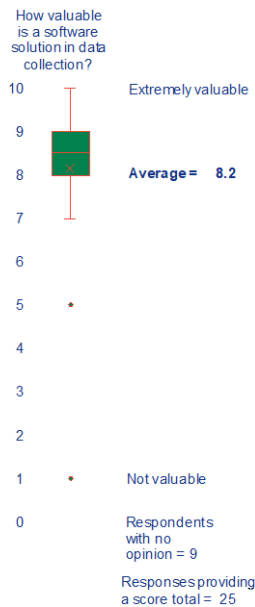
Missing or outdated data is frequent across all project phases. Projects with sensitive or uncertain elements are often under-reported, adding to these data gaps. Local governments are sometimes slow to share updates, contributing to incomplete datasets. The most difficult data to obtain often relates to project type, for which the absence of a standardised sector taxonomy leads to inconsistencies. Some **countries noted that poor data quality hinders their economic and digital transformation goals, affecting both efficiency and progress.** In the absence of complete data, comparisons with similar projects and onsite testing are often used to fill gaps.

9. Does your government perceive risks in how and where project data is stored/hosted? How does it evaluate cloud storage as a potential hosting solution?

Governments generally acknowledge risks associated with how and where project data is stored, with a strong emphasis on security, especially for sensitive or politically important data. Sovereign cloud capabilities are preferred in most cases to mitigate risks related to external control and potential foreign acquisitions of private cloud providers, which would compromise data security and confidentiality. Many governments insist on the issue of localisation of the data repository, to ensure security and trust and full compliance with national data protection laws.

Cloud storage is generally seen as a viable option for less sensitive data, with applications like SharePoint commonly used. But significant concerns remain when using cloud versions, creating potential security and sovereignty issues. A tiered approach to data protection is common, where less-sensitive data could be stored on private cloud services, while more-critical data is kept on internal or sovereign servers or other secure systems. Political and legislative factors also influence cloud adoption, with some governments facing resistance to changes in laws or reluctance against broader cloud storage use. Despite this, there is a trend toward transitioning to cloud-based systems, especially when sovereign cloud solutions are available.

10. On a scale of 1–10, how valuable would a software solution be in facilitating the data collection processes in your country? (0 = No opinion, 1 = Not valuable, 10 = Extremely valuable)



Many respondents **see value in an integrated software solution for improving** data organisation, storage, and communication. The ability to enhance interoperability, especially between national and sub-national levels, is also considered a key benefit.

However, adoption faces barriers – notably cost, time and the lack of internal capacity to implement and maintain such systems. There is concern about software becoming unsupported or the unpredictability of licensing fees, which can make long-term usage problematic and adoption difficult. Maintaining an operating framework based on the reliance on regular office applications, such as Excel, for example, can be seen as preferable because of its proven dependability and accessibility.

The insufficiency of in-house technical expertise on digitalisation matters is also a critical issue, and even when internal systems are available, training and capacity-building efforts are needed for effective deployment and use.

11. What types of value do you (wish to) extract from the data (e.g., private sector investments, direct insights, decision-making, communication, transparency, tiered services or monetisation, system integration)?

There is a clear desire to improve transparency regarding infrastructure projects in areas such as climate action plans, infrastructure programme and project details and government-private sector engagement. Effective IT communication is seen as crucial for better infrastructure project development and for making project data accessible to both citizen and private stakeholders. A major focus is on supporting data-driven decision-making, particularly in project prioritisation, investment planning and cost management, such as cost-benefit analysis and externality valuations.

Project data management and disclosure readiness are also **viewed as essential for attracting private sector investment, fostering competition and enhancing investment planning.** Respondents want data systems that can improve the efficiency of the project pipeline and identify market gaps. The need for data consolidation and comparison capabilities is also noted, particularly to streamline the project assessment process.

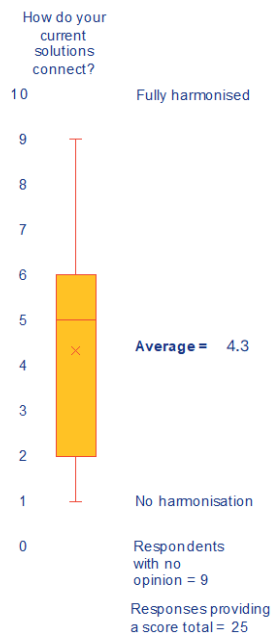
Section 2: Interoperability and harmonisation of systems

This section examines how well existing software solutions integrate across government departments and external systems. It investigates challenges related to system compatibility,



data exchange, and regulatory constraints. The goal is to understand how improved interoperability can streamline infrastructure planning and enable a more cohesive digital ecosystem for project pipeline development.

12. On a scale of 1–10, how seamlessly do your current software solutions connect (harmonise) with other ministries working on project preparation? (0 = No opinion, 1 = No harmonisation, 10 = Fully harmonised)



The **average harmonisation score reflects a generally low level of integration between software systems used by ministries involved in project preparation.** While national-level applications or systems support some degree of interoperability, coordination across sub-national levels remains weak, with limited alignment between IT capabilities and institutional management processes. Much of the data, particularly project financial information, is still processed manually, leading to delays of many months due to time-consuming audits and error checks.

Even where leadership supports IT integration, institutional reluctance often slows adoption. In many cases, ministries use entirely separate systems with no direct links, resulting in fragmented operating modes and limited manual data exchange. Overall, systems tend to **operate in silos, creating inefficiencies, data gaps and asymmetrical information,** with limited cross-agency collaboration and few incentives for shared data use.

13. What challenges have you encountered in integrating different software solutions into your project preparation processes?

Respondents identified a range of challenges in integrating a software solution for project preparation processes, primarily centred around technical limitations, organisational complexity and resource constraints. **A common issue is the lack of interoperability between systems, with different applications, frameworks or protocols and outdated legacy formats requiring significant effort to harmonise.** The absence of a unified IT data framework structure across agencies further complicated integration, particularly when coupled with closed or restricted systems due to legal or contractual barriers.

Several countries shared their experiences in integrating software applications into their infrastructure planning processes. **In one case, after undertaking an audit of the needs and processes, over 16,000 separate applications were identified nationwide, all requiring interconnection.** Another country reported the successful migration of 250 software applications onto a single unified system over several years. This, therefore, justifies the view that it is important to integrate a single unified software system approach

from the beginning. Each upgrade demanded considerable manual efforts to identify and incorporate the wide range of applications and systems still in operation. Beyond the use of dedicated applications for information sharing (e.g. SharePoint), several countries developed their internal infrastructure project pipeline systems. These were instrumental in budgeting and prioritisation, though respondents noted the substantial effort required to build them from the ground up. Success often depended on the creation of specialised teams or authorities established specifically to design and manage these transformation processes, with software applications tailored closely to national needs.

14. Are there specific functionalities you would like to see in a software solution?

The ideal integrated software solution should prioritise an intuitive, user-friendly interface, enabling ease of navigation with minimal prompts. Interoperability across ministries and levels of government, as well as with citizens and stakeholders as appropriate, is crucial. It should also include seamless information sharing and real-time project tracking via dashboards. Respondents highlighted the importance of features such as automatic alerts (e.g., red flags for stalled projects) to ensure efficient and timely project management.

15. Does your government anticipate the need to receive project data from external systems, such as other software solutions or non-governmental sources? Additionally, will you need to send project data to other international, national or tiered systems? (such as IoT devices or broader digital ecosystems)

Several respondents highlighted the potential to integrate external data into the project management IT system, particularly from accounting systems, receipts, invoices and claims. Many also noted that future developments – such as Digital Twin models, Common Data Environments, and data feeds from construction sites (drones monitoring safety or construction progress and environmental conditions) – will potentially have a positive impact and is likely to drive more data exchange between government bodies and with stakeholders like contractors.

However, many governments are not currently considering these data analysis aspects.

16. Do you have policies or constraints that affect your ability to connect with external systems (e.g., legal requirements, organisational policies, or technical limitations)?

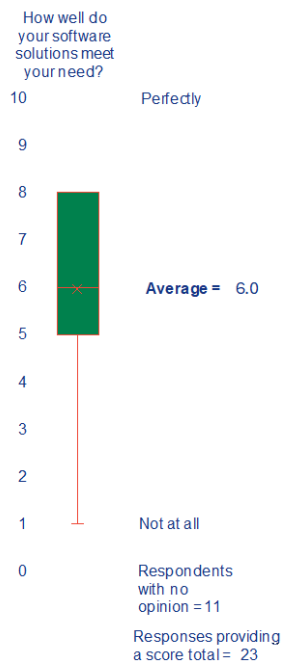
Many respondents identified legal and regulatory requirements as significant constraints when connecting to external systems, particularly around data protection, privacy and sovereignty. Government mandatory policies – such as residency rules for the repository of data and strict IT security requirements – are a further challenge for overall IT framework integration, especially if connected with external systems from private service providers. A whole-of-government approach is seen as essential to institutionalising a digitalisation

transition for infrastructure project preparation, with a repository for data collection, along with connecting with external systems effectively.

Section 3: Customisation with further insights

This section focuses on tailoring software solutions to meet the specific needs of governments in infrastructure project preparation. It explores best practices, lessons learnt and desired functionalities in digital tools. Additionally, it considers emerging technologies such as AI and their potential role in optimising project pipelines. The aim is to gather insights that can inform the development of adaptable and effective digital solutions for governments.

17. On a scale of 1–10, how well do your current software solutions for project preparation meet the specific needs and priorities of your government? (0 = No Opinion, 1 = Not at all, 10 = Perfectly)



Responses to this question varied considerably, with a wide range of scores. This suggests the presence of **two broad groups of countries: those who are broadly satisfied with their current software systems, and those who are not. A significant number raised concerns about fragmented applications and tools, poor standardisation and the challenge of turning large volumes of data into useful, actionable insights.** Some also pointed to upcoming system changes, suggesting a period of transition in several contexts. Many highlighted the need for a more consistent, integrated, and user-friendly solution approach across the board.

These findings underscore the importance of a **tailored solution approach that can address the specific national and local needs, besides the specific regulatory and sector contexts. While data management across actors is required, a one-size-fits-all approach was considered neither effective nor welcomed.** There is also some reluctance towards pre-established digital analytical tools that may poorly replace national expertise. The key concern is that **such tools should enhance and reinforce, not replace, the valuable knowledge and judgement of national professionals. A customised integrated solution approach not only increases ownership and usage deployment but also incentivises systematic data collection by ensuring the software aligns with national needs, conditions and priorities. Ultimately, the integrated solution must fully reflect and be tailored to the national domestic context to be effective, complementing national expertise, supporting and facilitating decision-making, and fostering a sense of ownership by the public actors over the technology.** This focus on domestic customisation is underlined as crucial for engaging in digitalisation transition and improving the effectiveness and acceptance of systematic data collection systems across ministries and local public authorities in different regions.

18. (Source community members only, relevant for side-event) On a scale of 1–10, how helpful would it be to share best practices and lessons learnt from other countries? (0 = No opinion, 1 = Not helpful, 10 = Extremely helpful)



Respondents for this question are part of the Source Community, and the overall sentiment expressed was strongly positive, with respondents generally indicating a high level of interest in sharing best practices and lessons learnt from other countries. Respondents highlighted that such exchanges would be extremely helpful in enhancing both the management and process dimensions of infrastructure project preparation.

Many conveyed positive feedback that the Source Community serves as an effective conduit for this type of knowledge-sharing, supporting the continuous improvement of national systems through exposure to international experiences. This feedback underscores a clear appetite within the Source Community for collaborative learning and cross-country exchange, with a view to strengthening their national project preparation capabilities.

19. What are some best practices your government has adopted in project preparation that you believe could benefit other nations?

Governments have adopted several best practices in infrastructure project preparation that could benefit other nations. A key element is the emphasis on transparency and structured processes and methodologies, such as pre-feasibility studies and the publication of the project pipelines. It was underlined that ensuring overall public access to detailed information on projects led to better decision-making and enhanced infrastructure design. Data visualisation has been noted as useful. Another important practice is capacity-building, not only at the national level but also within local municipalities, where some governments have actively worked to equip local authorities with the skills and applications needed to develop and manage infrastructure projects effectively. This IT support approach to sub-national level public bodies strengthens project delivery across all levels of government and helps ensure long-term skills development in the country by upskilling and empowering local teams to enhance their capabilities and take on more complex and larger-scale initiatives over time. Additionally, competitive and transparent bidding processes – often supported by centralised e-procurement systems – ensure fairness and integrity. Many governments also prioritise anti-corruption measures within procurement, contributing to more ethical and efficient project preparation despite occasional constraints.

Collaboration and knowledge-sharing across countries have been essential, with governments learning from others’ experiences and multilateral best practices in nearly all aspects of infrastructure project preparation, such as cost-benefit analysis and project

modelling with positive and negative externalities assessment, data preparation and reporting, ESG, project fiscal transparency and fiscal impact assessment, and project delivery modes. Finally, shifting the mindset towards greater collaboration with the private sector is seen as a critical practice for successful project outcomes.

20. How do you see AI being useful in project preparation? What do you expect from AI?

Respondents hope AI **will assist primarily with data analysis, providing insights for decision-making and improving the efficiency of infrastructure project preparation. AI is seen as a valuable tool for leveraging large datasets, identifying patterns, forecasting, assessing financial viability and integrating insight across multiple projects. Additionally, it could streamline routine tasks such as information retrieval, document preparation and modelling scenarios for cost and demand, facilitating quicker and more informed decisions.**

AI's potential for project-tracking is also noted, with suggestions that drones and remote sensing technologies could support the monitoring of progress in the implementation of infrastructure projects and reduce the need for constant on-site presence. However, many emphasise the conditions for a **solid foundation. Strong, high-quality data, robust systems, security aligned with IT sovereignty requirements, and efficient connectivity must be in place before AI can be used effectively. Poor data quality risks undermining the reliability of AI-generated insights and analytics, making careful preparation and reviews essential.** Currently, only very few countries are actively using AI in the context of their public projects, often for initial pilot purposes or early-stage phase preparation. While many are exploring its potential, most consider it premature for full-scale implementation. **Broader adoption is hindered by concerns around security, sovereignty, regulatory compliance and lack of mature policies. AI is expected to support, not replace, national human expertise and judgement capabilities, enhancing objectivity and efficiency, especially in repetitive or data-heavy tasks.**

b. Appendix 2: Shaping findings

The side event, *Showcasing the Use of Data to Support Project Pipeline Development*, aimed to provide insights and evidence-based contributions from G20 members and invited countries, drawing on experiences from Source as well as other national platforms and their interoperability. The side event contributed to the development of the Practice Guide, with a particular emphasis on applying principles for an ecosystem-based approach to planning and preparation.

Following the second IWG meeting, during which this side-event was hosted, a comprehensive report of the outcomes of the side-event was produced and distributed to all G20 IWG members and invited countries. The views of the Source Private Sector Community voiced during the side event are summarised here. Private sector input has been recognised as a critical component in both the formulation of an investable project pipeline and the refinement of broader IWG priority areas.

Views from the private sector community

Through the moderation of the side event, it was communicated that the private sector sees its role as being beyond providing capital, but as active partners in shaping sustainable and investable infrastructure. To invest with confidence, the private sector requires greater transparency in project data, access to reliable and standardised information, clear visibility of project pipelines and a comprehensive understanding of project risks (particularly the risks around environmental and climate resilience and impact aspects). While financing for investment is often available, the private sector frequently faces a shortage of well-prepared, investment-ready projects with clearly defined risk profiles. Systematic data collection and greater interoperability between software system approaches, and digital platforms such as Source playing a central role, can create visibility around project risks and critical development factors, but also offer adaptability to local contexts. At the same time, they should support customisable project preparation practices that reduce risk and enhance investor confidence.

Furthermore, the need for stronger and more structured collaboration was emphasised, underpinned by a comprehensive digital and software solution approach that improves the efficiency and transparency of project planning and preparation. Reliable data and consistent processes are essential for accurate risk assessment and sound investment decisions, as well as working alongside governments to support capacity-building and ensure continuity beyond political cycles. Strengthened legislation and institutional frameworks are necessary to preserve institutional knowledge and provide long-term stability. To that end, it is important that the international community scale up public investment and support developing countries in strengthening their investment environments, regulatory frameworks and institutional capacity – in line with national contexts and development priorities – to help attract private investment.

In summary, the private sector is largely ready to invest, but requires better-prepared projects, stronger partnerships and smarter, more adaptable, comprehensive digital solution approaches.

11. Citations

- European Commission. (2025). *TENtec Information System and TEN-T map library—European Commission*. TENtec Information System and TEN-T Map Library.
https://transport.ec.europa.eu/transport-themes/infrastructure-and-investment/trans-european-transport-network-ten-t/tentec-information-system-and-ten-t-map-library_en
- International Monetary Fund - Infrastructure Governance Facility. (2025). *The Public Investment Management Assessment (PIMA) Framework*. Infrastructure Governance.
<https://infrastructuregovern.imf.org/content/PIMA/Home/PimaTool/What-is-PIMA.html>
- KPMG LLP and ATKINS. (2021). *The value of Information Management in the construction and infrastructure sector*. <https://kpmg.com/uk/en/insights/data/the-value-of-information-management-in-the-construction-and-infr.html>
- Ministry of Economy and Finance, Korea. (2025). *Introduction of dBrain System*.
<https://www.openfiscaldata.go.kr/op/en/ug/UOPENUGA10>
- National Informatics Centre (NIC), Ministry of Electronics & Information Technology. (2024). *PM Gati Shakti—National Master Plan for Multi-modal Connectivity* | National Portal of India. National Portal of India. <https://www.india.gov.in/spotlight/pm-gati-shakti-national-master-plan-multi-modal-connectivity>
- Rosinfra. (2025). *Росинфра (Rosinfra)*. Rosinfra - Platform for Preparing Projects and Attracting Investment in Infrastructure. <https://rosinfra.ru/>
- U.S. Department of Transportation. (2024). *Secure Data Commons—Starting A Project* | US Department of Transportation. Secure Data Commons (SDC) - Starting a Project in the SDC for Project Owners. <https://www.transportation.gov/data/secure/starting-a-project>